

Remotely Powered and Remotely Interrogated Wireless Digital Sensor Telemetry System

Abstract

An electronic system includes a reader and a remotely powered and remotely interrogated sensor transponder. The sensor transponder includes a coil or an antenna, a switched reactance circuit, a processor, and a sensor. The sensor transponder receives power radiated from the reader to the coil or antenna. The sensor uses the power for sensing. The sensor transponder is capable of processing sensor data in the processor and transmitting the sensor data to the reader using the switched reactance circuit. In one embodiment, the receiver coil or antenna is part of a resonant tank circuit which includes an impedance matching circuit. The impedance matching circuit is connected to the receiver coil or antenna to provide greater current to the sensor or other power-using device than would be available to the sensor or other power-using device if the sensor or other power-using device were connected between the first and second end. The impedance matching circuit can be two or more taps to the coil or antenna.